

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

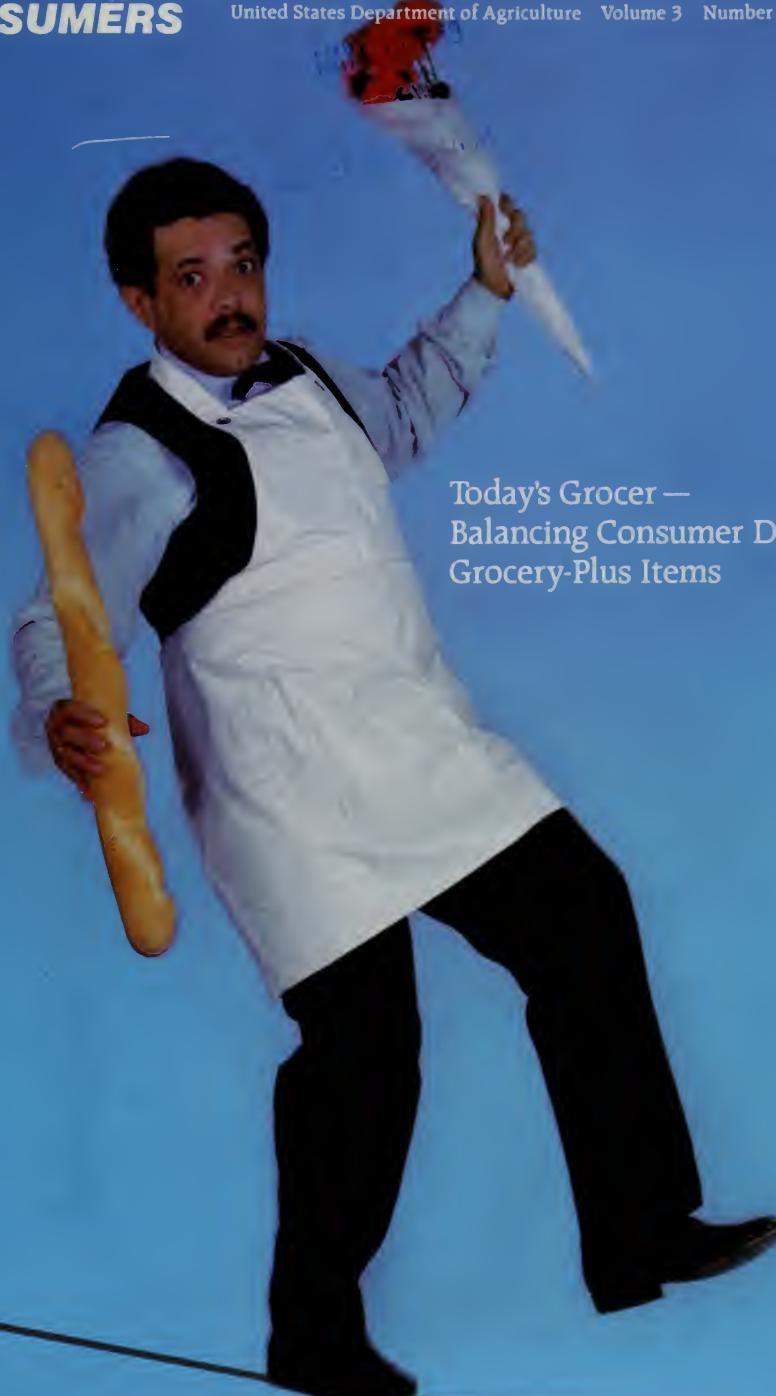


TX501
F66
Army 3

FOOD NEWS

FOR CONSUMERS

United States Department of Agriculture Volume 3 Number 1 Spring 1986



**Today's Grocer—
Balancing Consumer Demand for
Grocery-Plus Items**

FOOD NEWS

FOR CONSUMERS

Spring 1986
Vol. 3, No. 1

This magazine is published by the U.S. Department of Agriculture, Food Safety and Inspection Service.

Administrator

Donald L. Houston

Director, Information and Legislative Affairs

Nancy Robinson

Chief, Information Branch

Karen Stuck

Editor

Mary Ann Parmley

Associate Editor

Irene Goins

Editorial Assistant

Angela Judge

Production

Maxine Grant

Marketing

Laura Fox

Art Director

Deborah Shelton

Food News for Consumers is published four times a year. Subscription price is \$9.50 (domestic) or \$11.90 (foreign) per year. Send subscription orders to: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Send comments and inquiries to: Editor, *Food News for Consumers*, FSIS/ILA, Room 1160 South, U.S. Department of Agriculture, Washington, D.C. 20250. Telephone: (202) 447-9113.

Contents of this magazine may be reprinted without permission.

Cover: Chico Watson as grocer.
Styling and photography by Yuen-Gi Yee.

PERSPECTIVES



Dear Reader:

Flying back from a conference recently, I drafted my "New Year's Resolutions" on what I hope to accomplish as USDA's consumer advisor this year.

The plan is to concentrate on health education in two major areas: nutrition — how to eat wisely for a healthier life, and food safety — how to protect one's self from known hazards.

To that end, I'll be coordinating a number of efforts here at the Department to give the American people a clearer picture of the vast efforts the U.S. Department of Agriculture is making on their behalf.

"Vast" is the proper word. Over the last few years, for instance, USDA has worked with pork producers on the genetic selection and feeding regimens needed to produce a leaner, more popular product. As a result, pork today is 50% leaner than it was 30 years ago. Our scientists have shown that sodium levels in some processed meats can be lowered while maintaining product safety. And we work with distinguished groups like the National Academy of Sciences for guidance on the latest scientific thinking on how to most effectively safety-check food in production.

To better communicate these and other health advances, I hope to:

1. *Help information professionals stay in closer touch with top Departmental officials.* The thrust of this effort will be to increase access for those writers and broadcasters who communicate daily with consumers on food and health.

2. *Increase the public's understanding of what the Dietary Guidelines mean for them.* As you know, the second edition of the "Dietary Guidelines for Americans" was just issued. This is an important diet message for healthy people, but does the average person know "how" to eat less fat and more fiber? Or how to lose weight and still get essential nutrients? We'll be interpreting this advice in grocery cart terms.

3. *Better define real food safety problems.* Surveys show that concerns about food safety are often misdirected. People don't know what chemical names mean and often won't buy items with perfectly safe flavorings and stabilizers. But following food fads, they will drink raw milk or eat raw fish, increasing their risk for microbial infection. We hope to help them set better priorities.

Of course, no one could hope to accomplish all this in a single year. Nor can any of us at USDA perform such miracles alone. We need your help. We can profit from the insight you have into consumer thinking, and you can profit from our nearness to new research and to the policy arena. So let's keep our communication going, working together to keep consumers up-to-date on the vital concerns of nutrition and food safety.

A belated Happy New Year to you,

Ann Collins Chadwick

Ann Collins Chadwick, Director
Office of the Consumer Advisor
Phone: 202/382-9681



Consumer Education

Hotline Calling — What's Up with Spring Food? p. 4
 Trivia Quiz — How Long will a Teabag Last? p. 5
 *NEW! Pick-of-the-Pubs
 Free or nearly free pamphlets
 on cooking, nutrition, gardening p. 6

Special Feature

Supermarkets — Walking a Fine Line on
 Consumer Demand
 A narrow profit-margin means the big
 chains have to "stay-tuned" to
 customer wants and needs p. 7

Food Safety

Salmonella — A Closer Look
 In-depth report on this problem "bug" with
 all-important rules on prevention p. 10
 The Case of the Sneezed-Upon Ham — Can you
 pinpoint this new cook's "staph" mistake? p. 12

Health and Nutrition

MUST Reading — What's Happening on the
 Food Irradiation Front p. 14
 *NEW! Our First Children's Page Travels Back
 to Leeuwenhoek's First Microscope p. 17

News Wire

Hotline Report: Hurricane Gloria p. 18

The Consumer's Almanac p. 19

Highlighting Food Events for Spring

Consumer Education

Hotline Calling — What's Up with Spring Food?

Other people's lines may not be quite so busy, but USDA's Meat and Poultry Hotline has been "hopping" with baked ham and Easter egg questions lately.

Passover is just around the corner too. So here — based on questions our hotline home economists have heard from other consumers — are some spring food tips for you.

Q. I know that fresh pork and ham look different, but what exactly is ham?

A. You're right, fresh pork and ham look and are different. Fresh pork has a greyish color while ham is usually rosy pink. Ham is specially treated too. It's the meat from the hind leg of the pig that has been cured and possibly canned or smoked. The cure is the water and brine solution that gives ham that distinctive look and taste. It's the cure that helps preserve ham's freshness longer than uncured pork. Common curing ingredients include salt (a preservative), sugar (adds flavor), phosphate (a

moisture binder), and sodium nitrite (stabilizes the rosy pink color, and protects against spoilage and food poisoning bacteria).

Q. I'm so busy at Easter — buying the kids new clothes, cleaning the house — that I try to plan the dinner ahead of time. If I didn't, we might be eating peanut butter and crackers that day! I wonder, how long can I keep the ham in the refrigerator before cooking it?

A. To answer your question, we need to know what type of ham you're buying and how it's packaged. What does the label advise? The label is the best guide for determining storage time. It gives the product name, whether it's smoked or cured, and whether you must refrigerate it. While USDA doesn't require manufacturers to list the freshness date on products, many do. Look for instructions on the label that tell you how long you can keep the product. For example: "Best if used by April 15." Here are some guidelines for storage of the different hams you may find in the grocery store this season:

- **Fully-cooked hams (not canned).** Keeps about a week in the refrigerator. Place in the coldest part (the shelves nearest the freezer compartment) of the refrigerator. Your refrigerator should register 40° F.

- **Fully-cooked canned hams.** Most canned hams need to be refrigerated. A few brands are processed so that refrigeration isn't necessary.

Check the label to see what kind you've got. The canned type that requires cooling can be kept in the refrigerator for 6 to 9 months. A canned ham that does not need refrigeration will keep even longer. Just make sure the can isn't showing any bulges, cracks, or dents.

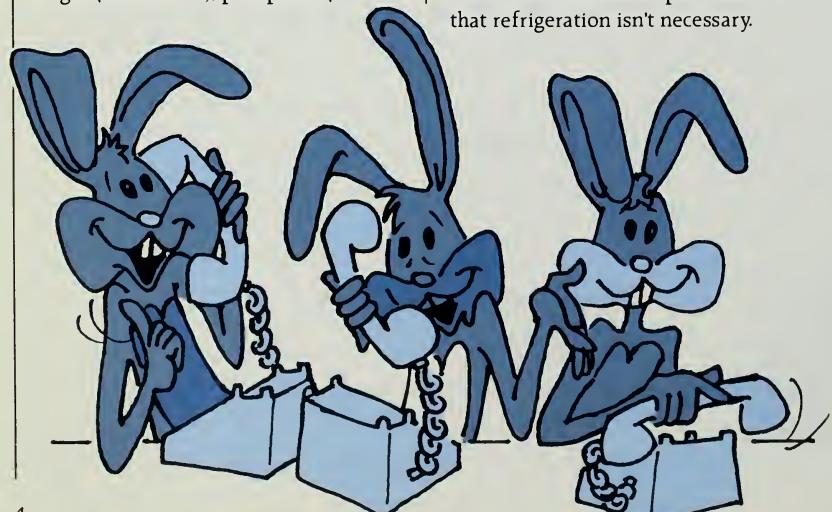
• Country ham, country-style ham, or dry-cured ham. These phrases describe a special type of ham that is dried and cured with salt, then smoked and aged to give it a distinctive flavor. Because of this process, these hams do not need refrigeration and can be kept several months. Remember, though, that these hams continue to age while you keep them. This means their taste will change. Don't be alarmed if you spot small mold patches on the outer skin. You may trim away this mold, and the rest of the meat will be good to eat. After you cut into these hams, though, and expose the inner tissue, it's best to use them right away. (Because of their saltiness and dryness, these hams require extra time to prepare. They are usually soaked and simmered in water before serving. Check your cookbook.)

Q. Is it all right to freeze ham?

A. It is and it isn't. By all means, if you must keep ham beyond its suggested refrigerator storage time, go ahead and freeze it. Why take chances with food spoilage? But ham, like other cured products, tends to lose flavor and texture in the freezer. To protect against moisture loss, wrap ham tightly in freezer paper or use special plastic freezer bags. Don't freeze it over a month or two.

Q. I host a spring get-together for family and friends each year. Because it's so convenient, I usually serve ham. But I'm concerned this year because some invited guests can't eat pork for religious reasons. I thought about serving a turkey ham, but I'm not sure it's completely ham-free. Is it?

A. A turkey ham would be a good alternative, allowing you the flavor you enjoy while respecting your friends' dietary practices. A turkey



ham looks like ham, but it is 100 percent turkey meat from the thigh of the bird. It can usually be found in the ham section of the store refrigerator case. A turkey ham is fully-cooked, so you need only heat it through before serving. It may be stored in the refrigerator for a week. If necessary it may be frozen. But, like other cured meats, it will lose quality if frozen more than a month or two.

Q. I'll give my first Seder this Passover, and my problem is that I want to greet everyone when they arrive and participate in the ceremony — the reading of the Exodus story and all — which lasts about an hour. However, for a formal Seder, you prepare a lot of food ahead — roast lamb, hard-boiled eggs, matzo ball soup, gefilte fish — and I've read that you shouldn't let these things sit out over an hour or

two. How can I both take part in the Seder and serve a safe meal?

A. You bring up a classic dilemma in safe food handling. No one wants to eat cold lamb or lukewarm gefilte fish, and you can't safely serve it after it's been at room temperature over two hours. Solutions? Serve your cold foods — the eggs and gefilte fish — straight from the refrigerator. Fully cook and slice the lamb before the Seder begins. Then either reheat it in the microwave while serving your matzo ball soup, or leave the foil-covered roast, kept moist with gravy, in a warming oven (about 200° F) until serving time.

Q. Is there any danger of contracting trichinosis from ham?

A. There is *no* danger of getting trichinosis from eating fully cooked hams. They are specially processed ac-

cording to USDA guidelines to kill trichinae. These hams are ready to eat.

Fresh pork or ham that says "cook before eating" however, needs extra care in preparation. Thorough cooking (to 170° F) of these products will kill trichinae — parasitic organisms that can cause trichinosis. The only sure way to know if pork reaches the 170° F safe temperature is to use a meat thermometer. The thermometer should be inserted in the thickest part of the cut, not touching the bone or fat.

Q. Hi! Easter bunny calling. Is it safe to hide colored eggs around the house the night before the Easter hunt?

A. That's not a good idea, food-safety-wise. The shells of hardcooked eggs lose some of their natural, pro-

(Continued on page 12)

FOOD NEWS Trivia Quiz #2

How Long Will a Teabag Last?

Let's say you bought some expensive English tea at Thanksgiving. Will it still be good for those special houseguests in April? That's five months.

Yes, says Anna Marie Coccia, a Lipton's spokesperson. Under normal circumstances, teabags will keep about a year and a half. For peak flavor, use them within a year, and store your tea in an air-tight metal cannister. This keeps flavor-sapping moisture away.

Are any safety hazards associated with tea? In hot, humid climates, or should tea become wet, mold can grow on it. This should be avoided since molds can cause allergies and illness.

Ever wonder how tea is made or where it comes from? Bob Dick, Supervisory Tea Examiner for the U.S. Food and Drug Administration (FDA), says most of our tea is imported from Argentina, Brazil,



Ceylon, India, Indonesia, Africa and China.

Since tea isn't grown here, it's always been an import, and was one of the first foods to come under official import scrutiny. The first Tea Act, says Dick, was passed in 1883 to guard against "adulteration" — where merchants would add lesser-grade teas or other leafy matter to plump out a good tea.

Today that clearly wouldn't be allowed. The Board of Tea Experts, an arm of the FDA, sets strict product standards enforced by tea examiners. Using sampling tech-

niques, the examiners actually taste-test a cup from every tea shipment that comes in.

Based on processing (all tea is made from leaves of the plant *Thea sinensis*, a type of camellia), there are three common types of tea — black (some 90 percent of tea Americans drink is black), green, and the Chinese teas like oolong and a few others.

Flavor and color in tea is produced by crushing the leaves to start fermentation. Then, depending on the desired outcome, fermentation is stopped at some point by heat treatment.

For black tea, the leaves are first withered, rolled, fermented and then "fired" at high temperature. Green tea is heated, rolled and then dried. Oolong, "Chinese restaurant" tea, is partially fermented and sometimes mixed with other teas.

Today we even have the new caffeine-free brands. Shall we pour?

— Moira Murphy



PICK of the PUBS

Many useful publications are available free or at low cost from the federal government. Here are some select booklets that can make spring and summer more enjoyable for you and your family.

— Jane Leclerc

Order these USDA pamphlets from the U.S. Government Printing Office, Washington, D.C. 20402. Make checks payable to the Superintendent of Documents.

Order these publications from the national **Consumer Information Center**, P.O. Box 100, Pueblo, Colo. 81002. Make checks out to: Superintendent of Documents. There is a \$1.00 handling fee if you order two or more free publications. If you're ordering free titles only, mark your letter: Attn: S. James. Make sure your envelope includes this order check-off form, your filled-in mailing label and payment (if necessary).

Food and Health

521N **The Confusing World of Health Foods.** Common sense about health food claims. FDA, 1981. 4 pp.
 Free

522N **Consumer's Guide to Food Labels.** Explains dating, symbols, grades and nutrition information on food labels. FDA, 1982, 4 pp.
 Free

Total CIC order:

Number of sales titles ordered _____

Number of free titles ordered _____

Total sales price \$ _____

\$1.00 fee if 2 or more \$ _____

Total enclosed \$ _____

Pork In Family Meals. (\$1.00) Home & Garden Bulletin 160. Includes ham recipes and tips on how to buy pork. 1982. 33 pp.

Lamb In Family Meals. (\$1.00) Home & Garden Bulletin 124. Offers lamb recipes and tips on buying lamb. 1982. 21 pp.

533N **Sugar.** Different kinds of sugar, how they work, and their caloric and carbohydrate values. FDA, 1981, 3 pp.
 Free

532N **Some Facts and Myths About Vitamins.** What vitamins are and are not, and which foods are the best sources. FDA, 1982, 4 pp.
 Free

Children

437N **The Thing the Professor Forgot.** Coloring book to teach children about good nutrition. USDA, 1979, 18 pp.
 \$.50

Gardening

451N **Steps in Fertilizing Garden Soil.** Information on testing soil and selecting the right kind and amount of fertilizer for your garden. USDA, 1977, 4 pp.
 \$.50

142N **Growing Vegetables in the Home Garden.** Everything you need to know about planning, planting, and caring for more than 50 different vegetables. USDA, 1980, 49 pp.
 \$3.25

439N **Growing Fruits and Nuts.** Illustrated guide to selecting, planting, and maintaining fruit trees, nut trees, and berry plants. USDA, 1977. 50 pp.
 \$.50

440N **Growing Vegetables in Containers.** For the small-scale gardener, tips on kinds of containers, soil, planting, and care. USDA, 1977. 7 pp.
 \$.50

Type or print your mailing label:

Name _____

Street Address _____

City, State, Zip _____

Special Feature

Supermarkets — Walking a Fine Line on Consumer Demand

by Patricia Drayne

What the customers want, the customers get. That's the philosophy behind supermarkets' increasing efforts to find out just what will please consumers — and then provide it in their stores.

The supermarket industry is highly competitive. The profit margin is less than 1 percent, and to stay in business, a chain or independent grocer must acquire and hold satisfied, loyal customers. Dissatisfied shoppers will soon take their grocery lists elsewhere. "They vote with their pocketbooks," noted Dagmar Farr, consumer affairs director of the Food Marketing Institute (FMI).

FMI is a trade association of 1,500 food retailers and wholesalers. Among the services it provides are research, public affairs, and education programs designed to help its members stay on top of what their customers want. For example, each year since 1974 FMI has sponsored a national consumer attitude survey. The 1985 survey, conducted by Lou Harris and Associates, collected information through telephone interviews with a representative nationwide sample of 1,005 male and female shoppers.

One of the most important findings was that consumers continue to expect supermarkets to provide a wide range of services. Fresh seafood is greatly in demand now. Of the shoppers surveyed, 64 percent reported they usually buy their fresh seafood at the supermarket — up from just 53 percent in 1984. Other products increasingly purchased at supermarkets include bakery goods, paper goods,

magazines, nonprescription drugs, flowers and plants, health and beauty aids, household repair and houseware items and greeting cards.

The survey also measured consumer concern about the nutritional value of foods. Concerns about fat content picked up from 8 percent in 1984 to 13 percent in 1985, and cholesterol-related mentions were also up. The baby boom generation reported more changes in their eating habits than other age groups, with common mentions including a reduction in the amount of meat eaten and an increase in vegetable and fruit consumption.



Access to that kind of information about consumer preferences means that the supermarket industry can spot trends early. It also has a built-in advantage over other industries: more frequent contact with customers. Timothy Hammonds, an FMI senior vice president, noted that grocers see nearly every family in America at least once every week. *"Because of this,"* he said, *"Food retailers detect changes in lifestyles faster than any other industry in the country."*

Identifying trends and taking them into account in deciding what products and services to offer is crucial for supermarkets, but, of course, manufacturers must be just as alert for

clues on what customers want. John Bryan, chairman of both Sara Lee and the Grocery Manufacturers Association, made the point that his company's well-being is "entirely dependent upon its ability to recognize and respond to significant consumer trends."

Roger Nunley, manager of industry and consumer affairs for Coca-Cola U.S.A., told a recent conference of consumer affairs professionals that the soft drink industry has responded to the preferences expressed by consumers for a wide variety of products. "For example, six different products are now sold under the Coke or Coca-Cola trademark, compared to just one in the past," he said. He noted also that today's consumers "are more curious about products." He said they are "seeking out information, digesting it, and taking action based on what they've learned."

According to the FMI survey, 36 percent of shoppers feel supermarkets are responsible for providing nutrition and health information. Although this is way down on their list of priorities, nonetheless it is a service they expect. Many supermarkets have responded to their customers' desire for information either by issuing their own educational materials or by making available materials from other sources. For example, Wegmans Food and Pharmacy, a 38-store New York chain, has developed a number of brochures on subjects ranging from gluten (wheat protein) sensitivity and lactose (milk sugar) intolerance to calcium and iron concerns of women. Mary Ellen Burris, director of consumer affairs, explained that Wegmans decides to issue such materials when customers have questions for which answers are not readily available.

Clerks in Wegman's health foods- and cheese and gourmet sections fill out forms recording questions customers ask. These, along with calls from consumers, help provide the data to determine what new educational material may be necessary. When brochures are written, they are reviewed

by health professionals before being distributed. Copies are free in Wegmans' marketing area.

Giant, a 134-store Washington, D.C. chain, also has an extensive consumer education program. Odonna Mathews, vice president for consumer affairs, noted that the Consumer Bill of Rights issued by President John F. Ken-

counters. The booklet contains recommendations on how to institute dietary changes and gives nutritional information for hundreds of products. Bulk copies are available to health professionals at a fee to cover costs.

The Diet Alert program is now in use in all Giant stores. Surveys indicate that about a third of Giant shoppers — including half of those on special diets — use the shelf markers.

Since many chains don't have the resources to develop educational materials, FMI puts out its own and makes them available to members. A brochure issued last August, "The Food Keeper," gives tips on maintaining food freshness and quality. It includes a chart with storage times for a wide variety of fresh and processed products. Single and bulk copies are available to members and non-members. The Meat Nutri-Facts program, developed by the American Meat Institute, the



nedy (1962) includes the right to be informed.

In response to a heavy volume of questions about nutrient content of products, Giant began its "Special Diet Alert" program in 1981 to provide customers with point-of-purchase identification of products considered low or reduced in sodium, calories, cholesterol, and fat. Working with the Food and Drug Administration, Giant developed a shelf marking system that makes it easier for shoppers with special diet needs to find suitable products. Their 100-page booklet, also labeled "Special Diet Alert," is available for 50 cents at Giant checkout

National Live Stock and Meat Board, and FMI, is being used by several major supermarket chains and many independent stores. It includes nutritional information on red meat, as well as recipes, basic cooking instructions, and storage and handling information.

Other organizations, too, have developed point-of-purchase educational programs. Last September, the American Heart Association held its first national week-long campaign for supermarket shoppers — on lowering cholesterol. Eight thousand stores participated in what is expected to become an annual event, displaying

posters and distributing pamphlets listing low-cholesterol and low-sodium foods.

Many supermarkets work at making it easy for their customers to ask questions, offer suggestions, and register complaints. For example, Safeway, a 2,000-store, nationwide chain, is committed to improving its existing customer communication channels. Consultant Barbara Ettinger is working on a special project involving all 17 of the chain's U.S. divisions. She explained that as supermarkets become larger, there are fewer opportunities for managers to talk with shoppers in a traditional "pass-it-along, store-level" exchange of information. "The managers are really running a small business," Ettinger said, "so they can't be on the floor as much as they used to. And the customers are in a hurry, too." So Safeway is now looking at ways in which consumers can be provided better access to the company.

Wegmans, like a number of other chains, uses customer comment forms on which shoppers can note what they like, what they don't like, and what they would like, according to its consumer affairs director. Cash-only express checkout lines are a recent Wegmans' innovation prompted by a consumer suggestion. The chain is now establishing one in every store.

The nationwide Kroger chain relies heavily on customer and market research to determine what shoppers want. Paul Bernish, director of public relations, explained: "At Kroger we believe we are run by customer preferences. For us to be doing our job right we have to be extremely close to what they want."

To get that information, Kroger conducts 200,000 interviews a year with consumers — mostly by telephone, but also by using focus groups. Its research indicates customer convenience is an overwhelming desire, Bernish said. Toward that goal of convenience Kroger instituted one-stop shopping establishments that include a pharmacy and general merchandise as well as food. About one-third of the chain's 1,300 stores are now "combos" (com-

binations), including 90 percent of the stores built since 1982.

Some years ago a change in long-standing Kroger policy resulted from one of the chain's surveys. Bernish explained, "We had always assumed customers wanted wrapped produce, and that's how we marketed it." But when Kroger checked with consumers, it learned they wanted unwrapped produce — "fruits and vegetables they could pick up, look through, and feel." Ever since, produce has been unwrapped in Kroger stores.* "We listened to what people were telling us, not to our earlier assumption," Bernish said.

Farm Fresh, a smaller chain with 36 stores in Virginia and North Carolina, takes a different approach to soliciting consumer views. Four consumer councils, with a total of 80 members, have been formed to share their observations with the Farm Fresh management. Interested customers volunteer to serve, and then are carefully screened and interviewed. Consumer Affairs Director Susan Mayo explained

***Editor's note:** While banks of fresh fruit and vegetables are attractive, be sure to wash these items before you eat them.

that members are selected for variety and balance in order to arrive at a cross-section of men and women typical of the areas served. "They represent not only themselves, but other consumers as well," she said.

The councils meet quarterly and are often used as a sounding board for proposals Farm Fresh is considering. For example, the members were enthusiastic about the idea of adding safety straps for grocery carts that young children ride in. Farm Fresh now has installed the straps in at least half of its carts. Mayo reported.

Consumer organizations are another means consumers have for exerting influence over the supermarket industry. On labeling, pricing, advertising, and other such issues, the activist groups have traditionally swung their weight on behalf of shoppers.

Stephen Brobeck, executive director of the Consumer Federation of America, the largest national organization of state and local consumer advocacy groups, sees an inherent conflict between consumers' interests and stores' profit motives. He says it's "a fact of life," for example, that stores promote and give prominent display space to high-profit items without regard to their nutritional value.

Brobeck adds, however, "While we remain concerned with supermarket efforts to influence consumer behavior, there is no industry that is any more sensitive and responsive to consumer demands."

— Patricia Drayne, deputy director of Information and Legislative Affairs for USDA's Food Safety and Inspection Service, has followed consumer issues for the agency for seven years.

Would You Opt for the No-Candy Line?

The supermarket check-out aisle, flanked by tempting candy displays, has traditionally been a battlefield for parents shopping with young children. Those who prefer that the candy not make its way into small fists and mouths often have a real struggle on their hands.

Protests from parents have prompted many supermarkets to eliminate the attractive nuisance from some checkout areas. Giant, for example, has recently begun including one no-candy lane in each store. In a radio message announcing the new policy, spokeswoman Odonna Mathews explained, "We've heard from many parents who have told us that their shopping would be more pleasant" without the easy access to candy.

Kroger introduced its candy-free lanes a few years ago after a Kroger executive shopping at one of the chain's Cincinnati stores happened to stand in line behind a woman and her two-year-old. The toddler spotted the candy, the usual struggle took place, and the mother complained to the checker about the continuing problem. The executive asked if she would prefer and would use a checkout line where candy was not displayed. "Yes!" she said. Today a majority of Kroger stores have such lines, according to spokesman Paul Bernish.

Tracking down the Nutrition Pubs

The Food Keeper:
Meat Nutri-Facts
Single copies free

Special Diet Alert
\$.50 per copy

Gluten Sensitivity:
Lactose Intolerance:
Calcium and Iron Concerns
Single copies free

— Publication Sales
Food Marketing Institute
1750 K Street, N.W.
Washington, D.C. 20006
(202) 452-8444

— Consumer Affairs
Giant Food, Inc.
P.O. Box 1804
Washington, D.C. 20013
(301) 341-4365

— Wegmans Food and Pharmacy
P.O. Box 844
Rochester, NY 14692
(716) 464-4760

Food Safety

Salmonella — A Closer Look

by Mary Ann Parmley

The press has called Salmonella a "superbug" — the food poisoner of the 1980s. That makes good headlines, but is it true?

Not really. Salmonella is hardly a newly-emerged "monster" food poisoner, nor should it be seen as unusually fearsome since it's easily controlled by careful food handling and thorough cooking.

The real problem with human Salmonella infections is that they are steadily growing. Figures from the National Centers for Disease Control (CDC), Atlanta, show that reported cases have doubled over the last decade — from about 22,000 a year in 1974 to some 41,000 in 1984.

So, while it's not the bug-that-ate-Minneapolis, Salmonella is a troubling issue. Dr. Alice Moran, a USDA food scientist who has studied Salmonella for over 30 years, suggests some reasons for these rising Salmonella rates.

First, says Dr. Moran, modern agricultural methods — which bring more animals into close contact at some stage in production — have caused a rise in communicable animal diseases like Salmonella.

She points as well to increased mass feeding of people. More of us buy ready-to-serve foods at delis and groceries. More of us eat in restaurants and cafeterias. More of us live in nursing homes. In mass-feeding, one food handling mistake can affect many people.

Dr. Moran explains that every day now we also have more "vulnerable" people in the population. As cancer therapy progresses, more people on chemo-therapy are immuno-sup-

pressed. That means the body's normal ability to fight off disease is lowered by the cancer-stopping drugs. Organ-transplant patients also receive medicine which, while it allows them to accept foreign "parts," reduces their ability to fight other diseases like food poisoning.

We're an aging population, too, she notes. More and more Americans are moving into the over-60 group, where the body's defenses decline.

Taking this overview — farm animals in close quarters, more people eating out and being fed from group kitchens, more people's immune systems suppressed for medical reasons, and an aging population — it's no wonder food poisoning bacteria, normally not much of a threat to young, healthy adults, have become a bigger problem.

Salmonella — The Latest Stats

While no hard figures are in for 1985 yet, the CDC estimates there were some 3 to 4 million cases of human salmonellosis in 1984.

Roughly 41,000 cases were officially reported, and the disease may have contributed to several hundred deaths.

Where do Salmonella bacteria come from?

You often read that Salmonella is "ubiquitous," meaning that it can be found in the air, soil, water and — most often — in the digestive tracts of animals and human beings. It continually cycles through farm yards in the water, soil, litter and feed of domestic animals. It's even found in the droppings of wild birds, reptiles and insects!

The fact that it's so hard to eradicate was recognized by an international group of scientists at a special Salmonella meeting in New Orleans last year. In the conference proceedings, the scientists pronounced that it

is virtually impossible to totally eliminate Salmonella in fresh meat and poultry products, eggs and raw milk.

We simply have to accept the fact that Salmonella bacteria are here to stay. There are some 2,000 different varieties of the microscopic-size, rod-shaped bacteria too. When you see the name *Salmonella newport* or *Salmonella typhimurium*, those complete scientific names identify one type of the bacteria.

How do you get salmonellosis?

While you could get salmonellosis in any number of ways, turkey, chicken, pork and beef are reported as the chief meat-food vehicles for human infection. What happens is that someone eats sufficient numbers of Salmonella bacteria in raw, undercooked, poorly handled or inadequately refrigerated food to become ill.

Protected by their food "overcoat," the bacteria survive one of the body's first major defenses — the acid bath in the stomach.

Passing into the intestine, the bacteria invade the intestinal wall and start multiplying. This causes the severe diarrhea seen in most victims. Some people also vomit and run fevers.

Taking two sample cases, let's see how you could actually get salmonellosis. Note that in both examples, the "bug" is passed along through undercooked food.

We're in the kitchen now. Say you're fixing hamburgers. This raw beef contains Salmonella bacteria. You wouldn't know it, of course, because, like most food poisoners, Salmonella doesn't change the look or smell of food.

You and your family like hamburgers well-done, so you're cooking the patties thoroughly. Thorough cooking kills Salmonella. You're not sure if the seasoning is just right, though. A little more salt? More pepper?

So you make your "fatal" mistake. You taste the meat before it's safely cooked to decide if it needs more sea-

soning. You might never think of "just tasting" as eating raw product. But, of course, it can be. In this case, you have also eaten the still-dangerous *Salmonella* bacteria.

Taking our second example from the newspaper, we move now to a recent military retirement dinner. It was described as black-tie, very elegant, only with one uninvited guest — the *Salmonella* bacteria present in an under-cooked roast beef. Alas, this gate-crasher's presence was felt in the early morning hours after the party, when several attendees wound up in the hospital. All recovered, fortunately.

Re-capping the symptoms.

Depending on someone's physical condition and the number and kind of *Salmonella* bacteria they take in, symptoms may develop 12 to 72 hours after eating. While any bout with salmonellosis is far from pleasant, the symptoms — diarrhea, fever and vomiting — normally run their course in 2 to 7 days. The main concern is

that the patient not become dehydrated.

More severe cases, of course, can require hospitalization. Watch for these danger signals: 1) continuous, severe diarrhea; 2) the patient runs a high fever, shows marked weakening and becomes disoriented; 3) the patient lapses into coma.

Protecting yourself at home.

Prevention is the key word in salmonellosis control, because the disease doesn't have to strike. Careful attention to food-handling prevents the illness. This is true for all types of *Salmonella* bacteria — even the antibiotic-resistant strains you may have read about. Just follow the rules in "How to Stay *Salmonella*-Safe".

Anyone at high-risk for food poisoning should be especially careful to follow these rules. Who is at high-risk? Infants, of course, the elderly and anyone — cancer patient or organ recipient — whose normal disease defenses are impaired. Other at-risk

groups include anyone receiving antibiotics for another medical reason or ulcer patients taking antacids that reduce bacteria-killing stomach acids.

What USDA's doing to solve the *Salmonella* problem.

While a conscientious effort in the kitchen is the best defense against *Salmonella*, the U.S. Department of Agriculture department's Food Safety and Inspection Service (FSIS) — which handles meat and poultry inspection — is currently taking additional steps.

"We're exploring initiatives at the farm and food plant level to reduce the numbers of *Salmonella* bacteria on meat and poultry products *before* they reach the store or kitchen shelf," said Dr. William Dubbert, chairman of FSIS' *Salmonella* Task Force.

FSIS is also extremely active in consumer education, not only with respect to preventing *Salmonella* infections, but in all areas of food safety.

(Continued on page 12)

How to Stay *Salmonella*-Safe

In the Kitchen —

1. Your hands pick up a lot of bacteria, and you should wash them in hot, soapy water before preparing food. This point should be emphasized to children.

2. Keep live *Salmonella* bacteria on raw meat and poultry from spreading to other food or from re-infecting cooked meat and poultry. To do this, wash your hands, dishes, utensils and counter surfaces with hot, soapy water after contact with raw meats and their juices.

3. **Cook all hot food thoroughly to kill *Salmonella* bacteria.** Red meat should reach 160 to 170° F; poultry, 185° F. Generally, when you're checking with a thermometer, any cooked combination food should reach 160° F. When you're

grilling food outside, red meat should cook until grey in the center; poultry until there is no red at the joints.

4. Don't taste for seasoning while cooking and before food is safely "done."

5. Keep pets and household pests away from food areas. They carry any number of microbes, including *Salmonella*.

6. Generally, serve cooked foods hot, and refrigerate or freeze them between use. Keep non-cooked perishables cold between serving. Your refrigerator to protect you, should register 40° F or lower; your freezer 0° F or below.

In general —

7. *Salmonella* is common in stream water and raw milk. Therefore it is not wise to drink untreated stream water or unpasteurized milk.

8. *Salmonella* may be found on egg shells. Don't use cracked or heavily soiled eggs unless the food they're going into will be fully cooked.

9. "You can also protect yourself," says Dr. Martin Blaser, a *Salmonella* researcher at the VA Medical Center in Denver. "by never taking antibiotics unless they're prescribed." What too often happens, Blaser says, is that you feel a cold coming on, and you take an antibiotic left over from a previous illness. Not only does this have no effect on the cold — colds are usually viral and antibiotics only treat bacterial infections — but the antibiotic clears the intestinal tract of the normal, protective bacteria that live there. That makes it easy for disease bacteria, like *Salmonella* and other food poisoners, to get a foothold.

For example:

- Last July, FSIS opened the first national 800-number meat and poultry hotline (800-535-4555) to operate year-round. The hotline handles questions on the everyday handling of meat and poultry products as well as what to do in an emergency.

- For the past 15 years, FSIS has produced consumer education materials on home and institutional control of *Salmonella* and other food poisoners. Last year alone, we distributed over a million-and-a-half publications, including our two basic food safety booklets — THE SAFE FOOD BOOK and TALKING ABOUT TURKEY. We also produce and promote food safety radio and television announcements and press releases. For five years, FSIS has sponsored a national children's poster contest to provide food safety instruction in our grade schools.

- FSIS is encouraging meat and poultry manufacturers to improve processing to lower *Salmonella* levels in their products. We're testing the use of acetic acid (much like vinegar) in poultry scald water and for washing sides of beef. With agency encouragement, many producers are already using harmless-to-humans amounts of chlorine in chiller water (used after butchering). These chemicals destroy *Salmonella*. Producers using these or other methods, who can show they have lowered *Salmonella* levels in their product, may soon be able to make a claim on the product label to that effect.

- We are exploring the use of medium-dose irradiation (300 krads) to destroy *Salmonella* in meat and poultry products.

- We have just begun bacteriological sampling of meat and poultry products to chart current levels of *Salmonella* bacteria in each species of raw meat and poultry. These base-line findings will serve to show the effectiveness of future eradication efforts.

- FSIS is encouraging feed manufacturers to reduce *Salmonella* levels in animal feed, frequently a source of infection. ■

Hotline Calling —

(Continued from page 5)

tective covering when cooked. The pores in the shell open too. Eggs are also handled quite a bit during the dyeing process, and it's possible that bacteria from your hands could seep through the shells, contaminating the inside. Then, if eggs are left out of the refrigerator for more than two hours, bacteria could multiply to dangerous levels and cause food poisoning. Therefore it's best to keep hardcooked eggs refrigerated until hiding time.

Q. I like to buy fresh eggs from the local farm stand, but they're not refrigerated. Is this unsafe?

A. They are probably safe, but gradually losing quality. You'll want to refrigerate the eggs as soon as you get home. Why? The shell's natural coating protects an unbroken egg from exposure to contaminants, but refrigeration lengthens its quality life. A high quality egg has a thick white and a firm yolk. The egg stands high and covers only a small area when broken. As an egg loses quality, the white thins out, the yolk flattens, and the entire egg splays out over a larger area.

Q. Is it true that eggs can carry *Salmonella* bacteria?

A. *Salmonella* bacteria may be on the egg's shell. That is why eggs with cracks might be a problem. Any egg with a cracked shell should not be eaten raw. Use it only in cooked food — cooking to 170° F will kill the bacteria.

A late-breaking egg tip? Our hotline home economists offer you this advice on cracking eggs for cooking. Crack eggs into a separate bowl or saucer before pouring them into the main mixing bowl. This way you can easily spot a bad egg, or pick out any stray shell fragments without contaminating your food mixture.

— Judy Liggett, writer
Research Assistance from
Susan Templin, FSIS home
economist

CAN

Consumers can avoid food poisoning by limiting food care mistakes at home. The FOOD NEWS case-study series explains how food poisoning occurs and can be prevented. The infamous *Staphylococcus aureus* gang is the villain of this piece.

Scenario

"Ah-choo!"

A single sneeze. A little one, nothing serious, an average-everyday-common cold. Kim decided that neither the sneeze, her sore throat, that achy feeling, nor the chilly, rainy day would stop her. "This is my big chance," she thought. "This Easter I get to take all the credit for dinner." Going to school in town had its advantages. She could ask the family over when she wanted to.

"And I'm almost through," she thought, patting the freshly-baked ham on the counter in front of her. "Ah-choo! Ah-Choo! Ah-choo!" The sudden sneezing fit caught her off guard. Kim quickly grabbed a paper-towel, and just missed the last sneeze.

The phone rang. "Hel-loo . . ." she sighed, while turning the thermostat from 80° to 85° F to warm the house. "Kimmie, did you see that? Scott's a monster, isn't he?"

"Pam!?! What time is it?," Kim asked.

"It's 11:30. You're going to miss 'One Life, One Love.' Julie finds out about Scott's affair with Stacey today." Pam said excitedly.



YOU SOLVE...

The Case of the Sneezed-Upon Ham?

"Oh, I can't miss this. Call you back later," Kim said, hanging up the phone and dashing for the television in the living room . . .

When Kim woke up, Julie had left Scott and it was 3:45 in the afternoon. She half sleepwalked to the ham on the kitchen counter. "Ah-choo!" she snatched another paper towel, finished some last minute preparations for her first Easter dinner and refrigerated the ham. "Nothing can go wrong," she thought.

Everyone arrived at 1:30 p.m. the next day. A joyous half hour of hugs and gossip preceded the serving of the piping hot dinner at 2:00. Kim had reheated the ham to an internal temperature of 170° F checking in several places with a meat thermometer. After all, she wanted everything to be perfect.

The dinner was a success of course. Kim's ham, topped with Aunt Mabel's secret wine glaze, was a smash hit.

Then, it happened swiftly, about 6 p.m. — an hour after everyone had gone. Kim felt kind of sick. "Maybe I ate too much," she thought. As she headed for the living room couch, the nausea started, later the vomiting and diarrhea would hit. That night, she discovered similar discomfort had struck other members of her family. Yes, the staph gang had attacked.

What was Kim's mistake?

Was her mistake in

A. Failing to refrigerate the ham during her nap and after cooking?

or

B. Failing to properly reheat the ham on Easter Day?

The Answer is "A." Kimberly sneezed over the ham spreading *Staphylococcus* bacteria over the meat. While watching her favorite "soap" opera, napping, and completing Easter dinner preparations, Kim left the ham at room temperature for over four hours. During this time, the bacteria was allowed to grow and produce a toxin or poison.

Kim refrigerated the ham overnight, but refrigeration doesn't destroy staph toxin and, at that point, the ham contained enough of it to cause illness. She correctly reheated the ham to a safe temperature on Easter Day, killing any staph bacteria still present. But, again, the heat-resistant toxin was not destroyed.

Where does staph come from? It is found in the nose, throat, digestive tract and on normal, healthy skin. Large amounts of the bacteria may be found in cuts, boils, pimples, and some types of skin infections. Undetectably, the toxin is produced on the surface of meat (in this case, the ham) as the bacteria multiply. When swallowed, the toxin causes the typical flu-like staph symptoms.

Because people got sick we can assume that Kim's nose and sore throat contained large numbers of staph bacteria. And she sneezed on the ham five times. A single sneeze can contain a thousand or more staph bacteria. As these bacteria multiply extensively, the toxin can be produced.

The amount of toxin it takes to cause illness depends on the person and the bacteria. Basically, the severity of staphylococcal illness depends on how much toxin is ingested. The more toxin you take in, the sicker you'll be.

But a good staph-filled sneeze, with a 4-6 hour incubation period at 80-85° F could produce enough toxin to cause sickness. After all, the optimum temperature for staph growth and toxin production is 90-105° E

How to beat the staph gang?

Don't leave food at room temperature for over two hours. Avoid cooking when battling colds, and handling foods when you have cuts. Also, remember to wash utensils used on raw meat and poultry before using them on cooked foods.

Be especially careful with meat, poultry, meat and poultry salads, cheese, egg products, starchy salads (potato, macaroni, pasta and tuna), custards and creme-filled desserts. Staph bacteria can be especially tricky to deal with because it can tolerate high salt concentrations, or even curing, that usually stops most bacteria. That gives it a growth advantage on cured meats like ham.

Symptoms of staph poisoning usually start 2 to 8 hours after the infected food is eaten. It generally strikes quickly as nausea and severe vomiting, followed by abdominal cramps and diarrhea. Though it is the mildest form of food poisoning, cases of staph poisoning may last a day or two.

— Richard Bryant

Health and Nutrition

Q & A: Irradiated Food at the Supermarket?

Irradiated spices are already in some foods on grocery shelves, and irradiated pork may not be far behind. New regulations may soon allow low-dose irradiation of fresh fruits and vegetables to protect them from insects and decay. Here, then, to keep you up-to-date, are answers to some often-asked questions about food irradiation.

Q. Why this sudden push for food irradiation?

A. Is 40 years sudden? For many years, soldiers in the U.S. Army, astronauts in the space program, and hospital patients with compromised immune systems have been eating food sterilized with irradiation. U.S. irradiation research has been going on since before World War II. Only recently, though, have long-term safety studies been completed. Now food processors are petitioning for government approval.

Q. How does irradiation affect food?

A. It depends on the dose, the food and the "targeted" organisms in the food. For example, low-dose irradiation is strong enough to inactivate microscopic trichina worms that may be present in raw pork that could otherwise cause trichinosis in people. But it's not strong enough to destroy many other disease-causing bacteria and spoilage organisms. So irradiated pork does not have an extended shelf-life.

On the other hand, low-dose irradiation is strong enough to slow the ripening and aging of fruit, and to prevent harm from insects. Thus, irradiated fruit does have an extended shelf-life.

Remember that irradiation has a range of doses and a range of effects, and doses are calculated to make only those changes the processor desires and consumers will accept. Approved irradiation doses, for example, do not change the way foods taste.

Q. What irradiated food is in the store right now?

A. Some processed foods contain spices that may have received high-dose irradiation to protect them against insects and microorganisms during bulk storage, before being added to foods. Dried enzymes, such as rennet (used in making cheese), may also receive high-dose irradiation. FDA approved these uses of irradiation in the early 1980s.

In the 1960s, FDA approved low-dose irradiation of wheat and wheat flour (to control insects) and of white potatoes (to inhibit sprouting). However, these products are not on grocery shelves because manufacturers did not find irradiation commercially practical.

In December 1985, the Department of Health and Human Services (HHS) announced its approval of a regulation allowing low-dose irradiation of fresh fruits and vegetables. (The Office of Management and Budget must review this regulation before it can become effective.) Margaret M. Heckler, then secretary of HHS, characterized food irradiation as "a proven, safe method to protect fresh fruits and vegetables from insects, and to inhibit spoilage and extend shelf-life." Low-dose irradiation of fresh fruits and vegetables could replace chemicals now used to control insects, and result in extended shelf-life. However, more research would be needed before irradiation of fruits could become common.

Q. Is irradiated fresh pork available now? Can I eat it rare?

A. You *may* soon see some irradiated fresh pork. FDA approved low-dose irradiation of fresh pork for trichina control in July 1985, and USDA approved it in January 1986. USDA must also approve the nuts-and-bolts of pork irradiation, as well as product

labels. These consumer protection steps take time.

If fresh pork has been irradiated, the treatment will only affect the microscopic trichina worms that could be in it, sterilizing them so that they can't reproduce inside the human body to cause trichinosis — a rare but serious disease. The approved dose would be too low to kill common bacterial food poisoners that could still live on the pork. To be safe, any fresh pork should be cooked thoroughly.

Irradiated fresh pork will *not* have an extended shelf-life or magical protection from improper handling. So, unless you freeze it, store irradiated fresh pork no longer than a day or two in the refrigerator — as you would any other fresh meat or poultry.

Q. Are irradiated foods as nutritious as non-irradiated foods?

A. Having no evidence that low-dose irradiation significantly affected the nutrient constituents of food generally, FDA tentatively concluded that foods irradiated at low doses will have the same nutritional value as comparable food that has not been irradiated. USDA plans to study the possibility of vitamin loss in pork irradiated at low doses.

It is known that under certain conditions, high-dose irradiation can result in a loss of some B-vitamins such as thiamine. But the only foods likely to be irradiated at high doses in the near future are foods like spices, which we eat in small amounts for their flavor — not their vitamins.

Q. How will I recognize irradiated foods?

A. In most cases, by their labels. FDA now requires the statement "treated with gamma radiation" or "treated with ionizing radiation" on basic foods, such as spices. However, when irradiated spices are then used in a processed food (which is *not* irradiated), the ingredient list for that food is not required to state that the spices were irradiated.

On the other hand, USDA will require full retail labeling for both raw and processed meat and poultry prod-

ucts. Thus, irradiated fresh pork roasts would be clearly labeled as such. The label of pork sausage made with irradiated fresh pork would also declare the presence of irradiated pork as an ingredient. Meat and poultry products may use a label phrase indicating that product was irradiated such as "irradiated to prevent trichinosis." USDA is also considering permitting use of an irradiation logo, perhaps the international irradiation symbol—a "flower" design.

Q. Should all foods be irradiated?

A. No. Irradiation is not appropriate for all foods or practical in all situations. For example, grapefruit becomes mushy or discolored at dosages effective to control insects or delay ripening. Processors would not irradiate such foods because consumers wouldn't buy them. Processors might not irradiate pork that will later be canned, because the heat from canning would destroy any trichina parasites that might be present. Also, processors are only likely to use irradiation if it's cheaper than the alternatives.

Q. What other countries have irradiated groceries?

A. Altogether, about 25 countries have approved irradiation of more than 40 foods. However, food irradiation is common only in the Netherlands, South Africa and Japan. In 1980, after several years of consideration, an international committee of experts (convened by the Food and Agriculture Organization, the World Health Organization and the International Atomic Energy Agency) concluded that irradiation of any food is safe up to 1,000 kilorads. This is the dose FDA has approved for dried spices and enzymes. It is 10 times the dose FDA has approved for trichina control in fresh pork.

Q. I know that irradiation doesn't make foods radioactive—but why not?

A. Gamma-irradiated food does not become radioactive, just as sending your suitcase under the airport scanner doesn't make it radioactive.

Gamma rays at the doses used for food irradiation could never make food radioactive, because their energy is simply not strong enough to cause nuclear change in the atoms that make up food. Energy many times greater would be necessary.

Gamma irradiation may be compared to turning on a light, illuminating a room, and turning it off again. Gamma rays pass into foods, affect the food, and leave the food. How the rays affect the food depends on the food, the dose and the organisms in the food.

In proper doses, gamma rays split enough of the molecules in harmful living organisms in food so they are no longer functional, without damaging the food itself.

Q. What other purposes is irradiation technology now used for in the United States?

A. In addition to cancer treatment, more than you're probably aware of: making tires more durable,

sterilizing surgical supplies, making nonstick cookware coating and the plastic used to wrap meat. Irradiation also shows promise as an inexpensive technology for cleaning sewage and detoxifying environmental contaminants.

Q. Where can I get more information about food irradiation?

A. For information about FDA's regulatory actions on irradiation, call (202) 245-1144.

For information about irradiated pork, call USDA's Food Safety and Inspection Service at (202) 447-9113.

For general information on food irradiation, write or call: Carole Shore, Food Irradiation Information Center Coordinator, National Agricultural Library, Room 304, Beltsville, MD 20705. Phone: 301/344-4368. If you write, please include your phone number so Ms. Shore can call you back for more information on your needs if necessary.

—Sharin Sachs

Effects of Food Irradiation

Dose	Rads	Purposes
Low-dose	1-100 kilorads	Control insects in wheat, wheat flour. Inhibit sprouting in white potatoes. Sterilize trichina worms in fresh pork. Inhibit decay, control insects in fresh fruits and vegetables.
Medium-dose	100-1,000 kilorads	Destroy Salmonella and other bacteria in meat and poultry.
High-dose	1,000-3,000 kilorads	Control insects, microorganisms in dried spices and enzymes used in food processing; destroy botulinum spore.

Dose: The international unit for quantifying the amount of radiation absorbed by a substance is the Gray. But you may be more familiar with the older unit—the rad. "Rad" stands for "radiation absorbed dose." 1 Gray = 100 rads. 1 kilorad (krad) = 1,000 rads.

Dose is calculated by knowing the energy given off by the radiation source, the distance between the energy source and the target material (food and its packaging) and the duration of treatment.



An Ant At Your Picnic May Be Ok, But Make Sure Food Poisoning Bacteria Stay Away!!

No summertime outing is complete without an occasional ant, but you'll want to make sure that more worrisome "bugs" — food poisoning bacteria — don't attend and spoil your fun.

Food poisoning incidents are more prevalent during warm summer months, so you'll want to know how to keep your food free from food poisoning bacteria.

Order your copy of the U.S. Department of Agriculture's newest publication, *Safe Food to Go*, to learn how to prevent food poisoning at your outings.



This 20-page booklet contains helpful information on:

- Hints for preparing and handling foods to be served away from home — for brown bag lunches, picnics, camping trips, or tailgate parties.
- Suggested foods that are safest for outings.
- A fold-out chart listing five basic summertime food safety tips.
- Information about food-borne poisoning organisms.

For your free copy, write:

Consumer Information Center
Dept. 597-P
Pueblo, CO 81009



the Children's Page

What Leeuwenhoek Saw

Wouldn't it be fun to discover whole new worlds? But what if other people didn't believe you? What if they thought you were making it up?

That happened to Anton van Leeuwenhoek (Lay-ven-hook). He first looked through a microscope and found a new world of tiny moving creatures. He called them "animalcules."

But when Anton tried to tell his neighbors about it, some of them thought he was a magician. Others thought he was crazy. Only a few leading scientists of the time believed him.

Of course that was 300 years ago in the town of Delft, Holland. The smallest animals anyone had ever heard of in 1647 were bed lice that bit at night.

And here was this crazy store-keeper Anton — not even a professor who wrote Latin — saying there were

animals smaller than you could imagine. Animals so small that *thousands* of them would fit into a grain of sand.

Some of the tiny creatures Anton saw were single-celled animals we now call protozoa (pro-toe-zo-uh). Others were bacteria.

How could Anton see these things? Through the microscopes he invented which worked like "super eyes."

Anton made his microscopes by putting a tiny glass magnifying lens between two metal plates. (See the drawing.)

His microscopes worked like powerful magnifying glasses. A magnifying glass makes what you put under it look about 10 times bigger. Anton's early microscopes made things appear about 300 times bigger.

Today a home microscope enlarges what you're looking at about 400 times. Fancy electron microscopes can magnify a million times.

So today we know about thousands and thousands of "animalcules."

We have identified lots of bacteria, and

we're learning more about viruses — which are even smaller — all the time.

People keep studying these tiny things because they are important. Why? One reason is that they can make you sick.

The last time you had the flu, a virus probably made you sick. And the last time you had a bad sore throat, a bacteria probably caused it. If you sneeze when you come out of a damp basement, a tiny mold spore could be making you allergic.

Certain kinds of bacteria are also food poisoners. If you eat food that wasn't kept cold or food that hasn't been cooked long enough, you can get food poisoning.

Watch for our next children's page. We'll tell you how to keep these bacteria food poisoners from growing in your food.

— Mary Ann Parmley

READ MORE!

Parents, check the children's section of your local library for these and other excellent books on early microscopes and the discovery of the microbial world.

On Leeuwenhoek:

Discoverer of the Unseen World. Payne. World Publishing, Cleveland, 1966.

Microbe Hunters. De Kruif. Harcourt, Brace, New York, 1953.

On microscopes:

Introduction to Biology. Chisholm & Beeson. Usborne Publishing, London, 1984.

Children's science, general:

Growing up with Science. Children's encyclopedia set. Alphabetical by keyword, illustrated. H. S. Stuttman, Westport, Conn., 1984.



News Wire

Hotline Report: Hurricane Gloria

In our planning before the opening of USDA's new toll-free Meat and Poultry hotline last July, we thought the holiday season—with Thanksgiving and Christmas—would be the trial-by-fire of our expanded service.

But it was Hurricane Gloria, which swept the East coast this fall, that first put us to the test. Fortunately, because we had all our backup systems in place and there are so many well-trained food safety experts at USDA we were able, after the first few calls, to answer most people on-line and to quickly return answers to the rest.

A hurricane, naturally, causes some difficult food spoilage problems. Many people were out of power for up to a week. They needed to know which of their foods would safely keep and which they must throw away. Beside canned goods, of course, it emerged that fruit juices, fresh eggs, cheese and bread last well. In some cases though, perishable goods, like fresh meat and poultry, had to be discarded.

Now that both Gloria and the turkey season are just indelible memories, our hotline home economists are back to supplying the everyday help with meat and poultry products which is the "staple" of our service. This advice is much requested, too. As projected, the hotline is now handling roughly 2,000 calls each month—as many as we used to receive in a year!

How do callers learn about the hotline? The media, we are pleased to say, has been a very effective "ad agency." Nearly 70 percent of callers say they heard of the hotline through newspaper stories or radio broadcasts.

But for anyone who hasn't heard, here's how to call the hotline. The toll-free number is 800-535-4555.

Callers in the Washington, D.C. metropolitan area can reach the hotline at 202-447-3333. Hearing-impaired individuals can reach the service by dialing either the "800" or the local Washington number. Both provide

access to a telecommunications device for the deaf (TDD). Our hours are 10 a.m. to 4 p.m., Eastern time.

—Georgia Stevens Neruda, Ph.D.
Hotline Coordinator

"How To Run A Consumer Week"



Available FREE!
Call Toll-Free 1-800-325-7272

For the 5th year, the annual National Consumer Week emphasizes that business, government and educators all play a vital role in informing and protecting the American consumer . . .

NCW Resources:

The organizations listed below have agreed to serve as resources for NCW materials and ideas.

Car Care Council

600 Renaissance Center
Detroit, Michigan 48243
313/259-4612
Brochure, "How to Make Your Car Care Fair a Success"

Consumer Information Center

Pueblo, Colorado 81009
Single copies of the "Consumer's Resource Handbook" and a catalogue listing a wide variety of free or low-cost consumer publications (allow 3 weeks for delivery)

Council of Better Business Bureaus

Department of Public Affairs
1515 Wilson Boulevard
Arlington, Virginia 22209
703/276-0100
Listing of publications on a wide variety of consumer topics

International Credit Association

P.O. Box 27557
St. Louis, Missouri 63141-1757
314/991-3030
Publication on how to run a consumer credit education week

National Consumers Week Radio News Service

P.O. 65313
Washington, D.C. 20035
Preparation of 60 second public service news features on consumer topics, tips, programs distributed by satellite to 2,000 AP & UPI radio news stations

American Council on Consumer Interests

University of Missouri
238 Stanley Hall
Columbia, Missouri 65211
314/882-6041
Newsletter and research-oriented journal and materials for members

Joint Council on Economic Education

2 Park Avenue
New York, New York 10016
212/685-5499
Consumer economics instructional materials for elementary and secondary levels

United States Office of Consumer Affairs

1009 Premier Building
Washington, D.C. 20201
202/634-4329
Official NCW poster, press/publicity packet
Presidential proclamation, 1985 NCW Final Report

National Health Screening Council for Volunteer Organizations

9411 Connecticut Avenue
Kensington, Maryland 20895
301/942-6601

Offers technical assistance, consultation and resources to help communities provide low-cost comprehensive health fairs which include screening, education, review and follow-up. NHSCVO has developed special programs for students, older people and minorities.

National Health Information Clearing-house

Post Office Box 1133
Washington, D.C. 20013-1133
or call toll-free 800/336-4797
In Virginia call 703/522-2590
(Collect calls will be accepted)

A central source of information and referral on health questions which serves consumers and health professionals alike, the NHIC maintains a data base of organizations for referral, produces directories and resource guides on a variety of topics and operates the National Information Center for Orphan Drugs and Rare Diseases. A U.S. Public Health Service Project, the NHIC cannot diagnose, provide medical advice, or make referrals to physicians

National Consumers Week April 20-26, 1986

The Consumer's Almanac

Highlighting Food Events for the Spring Months

Event	Theme	Contact
Fresh Fruit and Vegetable Week February 16-19	The wealth of high-nutrition, good-tasting fresh fruits and vegetables.	Kathleen Jones United Fresh Fruit and Vegetable Association Washington at Madison Alexandria, Va. 22314 (703) 836-3410
Egg Salad Week March 30-April 5	New uses for those "After-Easter" eggs.	Kay Englehardt American Egg Board Park Ridge, Ill. 60068 (312) 296-7043
National Consumer's Week April 20-26	"Consumers Rate Quality" — A week of events to emphasize that consumers both deserve and respond positively to quality products and services.	Patricia Faley U.S. Office of Consumer Affairs The White House Washington, D.C. 20201 (202) 634-4330
National High Blood Pressure Month May 1-31	"Treat Yourself to Life" — Regular check-ups and diet changes can help protect you from this "silent" killer.	Elizabeth Keighley High Blood Pressure Information Center, NIH Bethesda, Md. 20205 (301) 496-1809
Virginia Poultry Festival May 13-18	"Hats Off to Poultry" — A week of games, contests, music, food and festivities focusing on poultry.	Jane Moss Virginia Poultry Federation Harrisonburg, Va. 22801 (703) 433-2451
National Physical Fitness & Sports Month May 1-31	"Shape Up, America" — Dust off your running shoes and your calorie counter and get into all-American shape.	Matthew Guidry President's Council on Physical Fitness & Sports 450 Fifth St., N.W. Washington, D.C. 20001 (202) 272-3424
National Dairy Month June 1-30	"50th Celebration." Since 1937, the dairy industry has picked June to salute dairy cows, the dairy industry and dairy products.	Jane Holmes American Dairy Association 6300 N. River Road Rosemont, Ill. 60018 (312) 696-1800 — Liz Lapping

United States
Department of Agriculture
Washington, D.C.
20250

OFFICIAL BUSINESS
Penalty for Private Use, \$300

FIRST-CLASS MAIL
POSTAGE & FEES PAID
USDA-FSIS
Permit No. G-42

ORDER FORM To: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

Enclosed is \$_____ check,
 money order, or charge to my
Deposit Account No.

-

Order No. _____

Credit Card Orders Only

Total charges \$_____ Fill in the boxes below.

Credit
Card No.

Expiration Date
Month/Year

Please enter my subscription to FOOD NEWS FOR CONSUMERS
at \$9.50 (domestic) or \$11.90 (foreign) per year.

Company or personal name

Additional address/attention line

Street address

City State ZIP Code

(or Country)

PLEASE PRINT OR TYPE

For Office Use Only	
Quantity	Charges
<input type="checkbox"/>	Enclosed
<input type="checkbox"/>	To be mailed
<input type="checkbox"/>	Subscriptions
<input type="checkbox"/>	Postage
<input type="checkbox"/>	Foreign handling
<input type="checkbox"/>	MMOB
<input type="checkbox"/>	OPNR
<input type="checkbox"/>	UPNS
<input type="checkbox"/>	Discount
<input type="checkbox"/>	Refund